

WHAT IS CLAIMED IS:

1. A crystalline solid famciclovir form I, characterized by a XRD pattern with peaks at 15.5 and 15.9 ± 0.2 deg. 2θ .
- 5 2. The crystalline solid famciclovir of claim 1, further characterized by a XRD pattern with peaks at 8.2, 10.4, 14.5, 17.0, 17.7, 19.5, 20.6, 21.1, 22.3, 23.0, 23.9, 24.4, 25.6, 26.5, 28.6, 29.0 and 32.6 ± 0.2 deg. 2θ .
3. The crystalline solid famciclovir of claim 2, further characterized by a XRD pattern as substantially depicted in Fig. 1.
- 10 4. The crystalline solid famciclovir of any of claims 1-3, wherein the crystalline solid famciclovir contains less than about 5% wt of other famciclovir crystalline forms.
5. The crystalline solid famciclovir of any of claims 1-3, wherein the crystalline solid famciclovir contains less than about 5% wt of form II.
6. The crystalline solid famciclovir of claim 4, wherein the crystalline solid
15 famciclovir contains less than about 1% wt of other famciclovir crystalline forms.
7. The crystalline solid famciclovir of claim 6, wherein the crystalline solid famciclovir contains less than about 1% wt of form II.
8. A crystalline solid famciclovir form II, characterized by a XRD pattern with peaks at 16.2 and 16.4 ± 0.2 deg. 2θ .
- 20 9. The crystalline solid famciclovir of claim 8, further characterized by a XRD pattern with peaks at 8.3, 14.6, 17.8, 19.7, 20.7, 21.2, 24.5 and 25.6 ± 0.2 deg. 2θ .
10. The crystalline solid famciclovir of claim 9, further characterized by an XRD pattern as substantially depicted in Fig. 2.
11. A crystalline solid famciclovir form III, characterized by an XRD pattern with
25 peaks at 6.6 and 13.0 ± 0.2 deg. 2θ .
12. The crystalline solid famciclovir of claim 11, further characterized by an XRD pattern with peaks at 15.9, 16.7, 18.4, 19.6, 24.5, 25.0 and 26.2 ± 0.2 deg. 2θ .
13. The crystalline solid famciclovir of claim 12, further characterized by an XRD pattern as substantially depicted in Fig. 3.
- 30 14. The crystalline solid famciclovir of claim 11, wherein the crystalline solid of famciclovir is a methanol solvate.

15. The crystalline solid famciclovir of claim 11, wherein the crystalline solid of famciclovir is an ethanol solvate.
16. Crystalline solid famciclovir methanol solvate.
17. Crystalline solid famciclovir ethanol solvate.
- 5 18. A process for preparing the crystalline solid famciclovir of claim 1, comprising the steps of:
 - a) triturating an anhydrous famciclovir form in an organic solvent selected from the group consisting of isopropyl alcohol, acetonitrile, and diethylether; and
 - b) isolating the crystalline solid famciclovir of claim 1.
- 10 19. A crystalline solid famciclovir form I prepared by triturating an anhydrous famciclovir form in an organic solvent selected from the group consisting of isopropyl alcohol, acetonitrile, and diethylether.
20. A process for preparing the crystalline solid famciclovir of claim 1, comprising the steps of:
 - 15 a) heating crystalline solid famciclovir of claim 11 to about 40⁰C to about 90⁰C; and
 - b) isolating the crystalline solid famciclovir of claim 1.
21. The process of claim 20, wherein the heating of crystalline solid famciclovir of claim 11 is performed at a temperature of about 60⁰C to about 70⁰C.
- 20 22. A process for preparing the crystalline solid famciclovir of claim 1, comprising the steps of:
 - a) heating famciclovir monohydrate to about 40⁰C to about 80⁰C; and
 - b) isolating the crystalline solid famciclovir of claim 1.
23. The process of claim 22, wherein the famciclovir monohydrate includes the crystalline solid famciclovir of claim 1.
- 25 24. The process of claim 22, wherein the heating of famciclovir monohydrate is performed at a temperature of about 60⁰C to about 70⁰C.
25. A process for preparing the crystalline solid famciclovir of claim 1, comprising the steps of:
 - 30 a) heating the crystalline solid famciclovir of claim 8 to about 40⁰C to about 90⁰C; and
 - b) isolating the crystalline solid famciclovir of claim 1.

26. The processes of any of claims 18, 20, 22 and 25, wherein the isolated crystalline solid famciclovir of claim 1 contains less than about 5% wt of other famciclovir crystalline forms.
27. The processes of any of claims 18, 20, 22, 25 and 26, wherein the isolated
5 crystalline solid famciclovir of claim 1 contains less than about 5% wt of the form of claim 8.
28. The process of claim 26, wherein the isolated crystalline solid famciclovir of claim 1 contains less than about 1% wt of other famciclovir crystalline forms.
29. The process of claim 28, wherein the isolated crystalline solid famciclovir of claim
10 1 contains less than about 1% wt of the form of claim 8.
30. A process for preparing the crystalline solid famciclovir of claim 1, comprising the steps of:
 - a) providing a solution of famciclovir in an organic solvent selected from the group consisting of dichloromethane, chloroform, acetonitrile, ethylacetate,
15 acetone, THF, diethyl ether/dichloromethane mixture, dichloromethane/toluene mixture, ethylacetate/toluene mixture, acetonitrile/toluene mixture, dimethylacetamide and isopropylalcohol;
 - b) cooling the solution; and
 - c) isolating the crystalline solid famciclovir of claim 1.
- 20 31. A process for preparing the crystalline solid famciclovir of claim 8, comprising the steps of:
 - a) providing a solution of famciclovir in an organic solvent selected from the group consisting of ethanol and n-buthanol,
 - b) cooling the solution whereby the crystalline solid famciclovir form II
25 crystallizes, and
 - c) isolating the crystalline solid famciclovir of claim 8.
32. A process for preparing a mixture of crystalline solid famciclovir of claim 8 and crystalline solid famciclovir of claim 1 comprising the steps of:
 - a) providing a solution of famciclovir in an organic solvent selected from the
30 group consisting of chloroform, ethylacetate, diethyl ether/dichloromethane mixture, tetrahydrofuran, acetonitrile/toluene mixture, dimethylacetamide and isopropanol,
 - b) cooling the solution, and

- c) isolating the mixture of the crystalline solid famciclovir of claim 8 and the crystalline solid famciclovir of claim 1.
- 33. A process for preparing the crystalline solid famciclovir of claim 11, comprising the steps of:
 - 5 a) triturating an anhydrous famciclovir in methanol; and
 - b) isolating the crystalline solid famciclovir of claim 11.
- 34. A process of preparing a mixture of the crystalline solid famciclovir of claim 11 and the crystalline solid famciclovir of claim 1, comprising the steps of:
 - a) triturating an anhydrous famciclovir in ethanol; and
 - 10 b) isolating the mixture of the crystalline solid famciclovir of claim 11 and the crystalline solid famciclovir of claim 1.
- 35. A process of preparing a crystalline solid famciclovir monohydrate, comprising the steps of:
 - 15 a) providing a solution of famciclovir in an organic solvent selected from the group consisting of acetonitrile, ethyl acetate, acetone, isopropyl alcohol, tetrahydrofuran, ethanol/water mixture, acetone/water mixture, DMF/water mixture, DMA/water mixture, acetonitrile/water mixture, methanol/water mixture, tetrahydrofuran/water mixture, and isopropyl alcohol/water mixture; and
 - 20 b) cooling the solution; and
 - c) isolating the crystalline solid famciclovir monohydrate.
- 36. A process for preparing a mixture of the crystalline solid famciclovir of claim 11 and crystalline solid famciclovir monohydrate, comprising the steps of:
 - 25 a) triturating anhydrous famciclovir in an organic solvent selected from the group consisting of isopropyl alcohol and ethanol; and
 - b) isolating the mixture of the crystalline solid famciclovir of claim 11 and crystalline solid famciclovir monohydrate.

37. A pharmaceutical composition comprising the crystalline solid famciclovir of claim 1 and a pharmaceutically-acceptable excipient, wherein the crystalline solid famciclovir of claim 1 contains less than about 5% wt of other famciclovir crystalline forms.
- 5 38. The pharmaceutical composition of claim 37, wherein the crystalline solid famciclovir of claim 1 contains less than about 1% wt of other famciclovir crystalline forms.
39. A pharmaceutical composition comprising the crystalline solid famciclovir of claim 8 and a pharmaceutically-acceptable excipient, wherein the crystalline solid famciclovir form II contains less than about 5% wt of other famciclovir crystalline forms.
- 10 40. The pharmaceutical composition of claim 39, wherein the crystalline solid famciclovir of claim 8 contains less than about 1% wt of other famciclovir crystalline forms.
- 15 41. A pharmaceutical composition comprising the crystalline solid famciclovir of claim 11 and a pharmaceutically-acceptable excipient, wherein the crystalline solid famciclovir form III contains less than about 5% wt of other famciclovir crystalline forms.
42. The pharmaceutical composition of claim 41, wherein the crystalline solid famciclovir of claim 11 contains less than about 1% wt of other famciclovir crystalline forms.
- 20 43. A method of treating a human in need of treatment with famciclovir comprising administering to the human the pharmaceutical composition of any of claims 37-42.